



## FAVERO GEOSCIENCES

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April 14, 2010

Mr. Don Heller  
U.S. Environmental Protection Agency, Region 5  
Waste Management Division  
77 West Jackson Blvd., HRP-8J  
Chicago, IL 60604-3590

RE: First Quarter 2010 Progress Report  
RCRA Corrective Action  
Allison Transmission, Speedway, IN  
USEPA ID Nos. IND006413348 and IND000806828

Dear Mr. Heller:

The attached progress report is submitted on behalf of General Motors LLC (GM), in accordance with the requirements of the Performance-Based Corrective Action Agreement between the U.S. Environmental Protection Agency Region 5 (USEPA) and General Motors Corporation. The progress report covers the first quarter of 2010 (January 1, 2010 through March 31, 2010).

Please contact me if you would like to discuss this matter further. Thank you.

Sincerely,

David M. Favero, P.G.  
Project Manager

Attachment A – First Quarter 2010 Progress Report

C: Glynda Oakes, IDEM Office of Land Quality (via e-mail)  
Adam Rickert/Pam Thevenow, Marion County Health Department (via e-mail)  
Marilyn Dedyne/Jean Caufield, GM (paper and e-mail)  
Kim Crame/Sue Barto, Allison Transmission, Inc. (via e-mail)  
Speedway Library (Public Information Repository) (paper)

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ATTACHMENT A  
FIRST QUARTER 2010 PROGRESS REPORT  
PERFORMANCE-BASED RCRA CORRECTIVE ACTION  
ALLISON TRANSMISSION  
JANUARY 1, 2010 TO MARCH 31, 2010

WORK PERFORMED THIS QUARTER

- Completed additional groundwater and borehole water data collection in the Vermont Street area.
- Completed and submitted the *Supplement to RCRA Facility Investigation: Vermont Street Investigation Data Report*, RCRA Corrective Action, Allison Transmission, Inc., Speedway, Indiana, USEPA ID #IND006413348 & IND000806828.
- Submitted a proposal for additional monitoring wells at Allison Plant 12 in order to verify previous findings that no chlorinated organic compounds were migrating beyond the Plant 12 property boundary.
- Completed and submitted the *RCRA Corrective Action Interim Measures Semi-Annual Status and Groundwater Monitoring Report for the Second Half 2009*.
- Continued operation and maintenance of interim measures: soil vapor extraction (SVE)/groundwater recovery system at the Plant 12 Former Degreaser Area (AOI 51), passive free product recovery and groundwater recovery related to the diesel fuel impacted groundwater plume (AOI 40), free product recovery at the waste treatment area (AOI 19), and passive free product recovery at the Transmission Test Assembly Area (AOI 53).
- Responded to a non-reportable release from the Plant 12 former degreaser area remediation system. See more detailed description in Problems Encountered section below.

DATA AVAILABLE DURING THIS QUARTER

- Analytical results from monitoring air emissions from the Plant 12 former degreaser area SVE and air stripper exhaust stacks (to be included in the *RCRA Corrective Action Interim Measures Semi-Annual Status and Groundwater Monitoring Report*, First Half 2010, anticipated submittal date July 14, 2010).
- Analytical results from monitoring the effluent from the pretreatment of recovered groundwater from the diesel fuel plume (Outfall 003), and effluent from the treatment of recovered groundwater from the Plant 12 Former Degreaser Area (Outfall 004), (to be

included in the *RCRA Corrective Action Interim Measures Semi-Annual Status and Groundwater Monitoring Report*, First Half 2010, anticipated submittal date July 14 2010).

- Analytical results and water level measurements from certain monitoring wells (included in *Supplement to RCRA Facility Investigation: Vermont Street Investigation Data Report* submitted to USEPA on 2/12/10).
- Analytical results from soil in the vicinity of the above-mentioned non-reportable release at the Plant 12 former degreaser area (included in the enclosed memo).

### PROBLEMS ENCOUNTERED

- At 09:27 on Wednesday morning, February 3, 2010, water was being emitted from the equalization tank vent at the Former Degreaser Area (AOI 51) Groundwater Remediation building. ARCADIS promptly turned off the remediation system and evaluated the situation. No standing water was observed; however, a wet area with approximate dimensions 3'x3' was noted. It is estimated, based on observations of those present, that approximately 20 to 30 gallons of water were released, which, based on historic groundwater analytical results was determined to be not a reportable quantity (i.e., less than 100 lbs PCE).

ARCADIS collected a surface soil sample from the area of impact identified above on February 4, 2010, and analyzed for total compound list (TCL) volatile organic compounds (VOCs) via USEPA Method 8260. PCE was the only VOC detected in the surface soil sample at 16.4 ug/kg, which was compared with the site-specific screening criteria for PCE. Based on the comparison of PCE to the screening criteria, there was not an exceedance; therefore, additional action was not performed to address the soil. Please see enclosed technical memo documenting the February 3, 2010 event.

### SUMMARY OF PROBLEM RESOLUTION

- ARCADIS performed an internal root cause analysis. It was determined that some pumps were left in the "AUTO" position during air stripping cleaning activity, which then relied on system instrumentation (level switches) to turn off the pumps. The operating instructions have since been updated such that field staff now turns off all non-necessary equipment during air stripper cleaning. Additionally, the system process logic control programming was enhanced to prevent a future release and a preliminary failure analysis was performed of other system equipment and instrumentation. Additional system upgrades (including duplicate high level alarms) are in the process of being implemented. Please see enclosed technical memo documenting the February 3, 2010 event.

### POTENTIAL PROBLEMS

- None.

### ESTIMATED PERCENT COMPLETE FOR SELECTED ACTIVITIES

- |  |      |
|--|------|
| • DOCC   | 100% |
| • Public Participation Plan  | 100% |
| • RFI Work Plan  | 100% |
| • RFI Phase I Implementation   | 100% |
| • RFI Data Report (through Phase I data)   | 100% |
| • RFI Phase II Implementation  | 100% |
| • RFI Data Report (updated to include Phase II data)   | 100% |
| • RFI Phase III Implementation   | 100% |
| • Plant 12 Former Degreaser Area (AOI 51)<br>Downgradient Groundwater Migration Control<br>Interim Measures Work Plan      | 100% |
| • Plant 12 Former Degreaser Area (AOI 51)<br>Downgradient Groundwater Migration Control<br>Interim Measures Implementation | 100% |
| • AOI 19 Interim Measures Work Plan  | 100% |
| • AOI 19 Interim Measures Implementation   | 100% |
| • Draft RFI Report   | 100% |
| • Final RFI Report<br>(Submitted February 20, 2009)  | 100% |

- Environmental Indicator Human Health 100%
  - CA725 Determination (Due by March 31, 2008 and Submitted on March 28, 2008); Resubmitted on July 1, 2008 and approved by USEPA on September 25, 2008.
- Environmental Indicator Groundwater Migration 100%
  - CA750 Determination (Due by March 31, 2008 and Submitted on March 28, 2008)
- Sampling to Support Corrective Measures Proposal and Confirm RFI Results 100%
- Data Report for Additional Sampling 100%
- AOI 2-1 Interim Measures Work Plan 100%  
(Approved by USEPA on November 6, 2008)
- AOI 2-1 Interim Measures Implementation 100%
- Stage II Additional Sampling to Support the Corrective Measures Proposal and to Support Evaluation of Interim Measures System Performance 100%
- Data Report For Stage II Additional Sampling 100%  
(Submitted March 27, 2009)
- Stage III Sampling Matrix 100%  
(Submitted June 19, 2009)
- Stage III Additional Sampling Implementation 100%
- Data Report For Stage III Additional Sampling 100%
- Corrective Measures Proposal 100%  
(Revised due date; March 31, 2009: Submitted March 31, 2009)
- Operation, Monitoring and Maintenance of Interim Measures  
[Note that the estimated percent complete for these interim measures are only intended to be rough approximations and are subject to revision based on review of monitoring data. Discontinuing operation of any of these interim measures will be coordinated with USEPA]

and will be based on a review of monitoring data and evaluation of appropriate risk-based end points, if applicable.]

- Plant 12 PCE Soil Vapor Extraction System	47%
- Plant 12 PCE Groundwater Recovery System	8%
- Plant 12 Transmission Test Assembly Area	71%
- Diesel Fuel Plume Recovery System	57%
- Waste Treatment LNAPL Recovery System	5%

#### SUMMARY OF CONTACTS WITH INTERESTED PARTIES

- Provided the following documents to the public information repository this quarter:
  - *Fourth Quarter 2009 Progress Report*, RCRA Corrective Action, Allison Transmission, Inc., Speedway, IN, USEPA ID Nos. IND000806836 and IND094469913, January 14, 2010.
  - *RCRA Corrective Action Interim Measures Semi-Annual Status and Groundwater Monitoring Report*, Second Half 2009, ARCADIS, January 14, 2010.

#### CHANGES IN PERSONNEL

- None.

#### PROJECTED WORK FOR NEXT REPORTING PERIOD

- Complete the installation and sampling of additional monitoring wells at Plant 12.
- Complete a round of groundwater monitoring at select monitoring wells.
- Begin preparation of the *RCRA Corrective Action Interim Measures Semi-Annual Status and Groundwater Monitoring Report for the First Half 2010*.
- Prepare responses, summaries of meetings, data reviews, or other conference calls with USEPA, as appropriate.
- Perform routine operation, monitoring and maintenance for operating remediation systems and implement duplicate high level alarms at remediation systems.

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Enclosure:

*Memo - February 3, 2010 - AOI 51 Remediation System Incident*, April 12, 2010, ARCADIS.



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**MEMO**

To:  
David Favero  
Favero Geosciences

Copies:  
Marilyn Dedyne – GM LLC  
Sue Barto - ATI

From:  
Eric Moosbrugger

Date:  
April 14, 2010

ARCADIS Project No.:  
IN000473.0019.00009

Subject:  
February 3, 2010 - AOI 51 Remediation System Incident

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**Release Information**

At 09:27 on Wednesday morning, February 3, 2010, water was being emitted from the equalization tank (EQ) air vent at the Former Degreaser Area (AOI 51) Groundwater Remediation building. Upon receipt of this information from Allison Transmission, Inc. (ATI) personnel, ARCADIS immediately performed a remote login to the system and activated the emergency-stop (e-stop) button. At the time of e-stop activation, continued discharge was observed from the east building, so it was unknown at the time if the e-stop did work correctly and the remaining discharge was gravity feed/excess pressure in the line, or that the e-stop was ineffective and continued pumping was observed. An ARCADIS representative was on-Site within minutes and evaluated the situation. No standing water was observed; however, a wet area of approximate dimensions 3'x3' was noted (see Photo 1, attached).

It is estimated, based on observations of those present, that approximately 20 to 30 gallons of water were discharged from the air vent. The RQ for tetrachloroethene (PCE) is 100 lbs, and assuming PCE has a specific gravity of 1.624, the PCE would weigh 13.54 lbs/gallon. Based on recent concentration data, the number of gallons that would have had to be discharged from the air vent in order to exceed the RQ would be in excess of 70,000 gallons (168 ppm PCE in recent analytical from the DNAPL separator). Since it was estimated that only 20-30 gallons were discharged, the RQ amount was not exceeded.

## Soil Sampling

ARCADIS collected a surface soil sample (0 – 0.5' below ground surface), from the area of interest identified above on February 4, 2010 (see Photo 1, attached). The soil sample was submitted to Pace Analytical in Indianapolis, Indiana and analyzed for total compound list (TCL) volatile organic compounds (VOCs) via USEPA Method 8260.

PCE was the only VOC detected in the surface soil sample. The concentration of PCE in the soil was 16.4 µg/kg. Table 1 below provides the site-specific screening criteria for PCE which have been reviewed by US EPA Region 5. Based on the comparison of PCE to the site-specific screening criteria, the concentration of PCE in the soil did not exceed; therefore, additional action was not warranted to address the soil.

**Table 1. PCE Screening Criteria for Soil**

Residential PRG	4.8 mg/kg
Industrial PRG	13.1 mg/kg
Residential Soil Volatilization to Indoor Air Criteria	1.56 mg/kg
Industrial Soil Volatilization to Indoor Air Criteria	1.45 mg/kg
Soil Migration to Groundwater (based on MLC)	2 mg/kg

PRG – Region IX Preliminary Remediation Goal, Hazard Quotient of  $10^{-5}$  and HI of 1.

## Incident Evaluation

At the time of the observed release, the EQ tank was intentionally full of water, and the air stripper was being cleaned. Cleaning the air stripper involves operating the air stripper closed-loop to recycle a muriatic acid solution, which cleans the fouled air stripper trays from the iron/hardness in the extracted groundwater. The standard procedure is to start the air stripper cleaning after filling the EQ tank. This is done because after running the acid solution through the air stripper for 2 hours or more, the “closed-loop” is “opened”, and the low pH water is pumped into the mostly-full EQ tank. By having a full tank, there is typically sufficient solution to neutralize the pH so no additional high pH (basic) solutions need to be added before discharge to the POTW.



Initial root cause analysis suspected the EQ tank high level alarm did not activate an interlock to prevent any/all influent pumping to the EQ tank and/or the logic was incorrect and only shut off some, but not all, influent pumping sources.

It is thought that during air stripper cleaning on February 3<sup>rd</sup>, the source area recovery wells were still operating, the DNAPL separator filled, which resulted in the DNAPL separator level switch calling for transfer of its water to the EQ tank. It was thought that the programmable logic controller (PLC) was configured such that the DNAPL separator would “observe” the full EQ tank and not transfer the water. This was not the case. When the water was transferred, the tank overfilled, filled the vent pipe and began discharging outside the east building.

ARCADIS evaluated PLC programming and determined that the emergency stop via remote login was active only for the groundwater treatment system (east building). The remote e-stop was not configured to control the Source Area wells and SVE system (west building). That is the apparent reason for the observed continued release after ARCADIS remotely activated the e-stop button.

### **Corrective Actions**

Formerly, the EQ tank vent pipe was routed to the influent air intake pipe for the air stripper blower, but the tank vent was temporarily routed to a passive vent pipe after replacement of the EQ tank. After the February 3<sup>rd</sup> incident, the EQ tank vent has been re-routed to the air stripper discharge stack. Now, if this same series of events were to occur, the excess water filling the vent line would drain into the air stripper, not outside the building. The water would be processed in the air stripper or level switches in the air stripper sump would activate additional alarms, to prevent additional pumping.

PLC programming for the remote emergency stop button has been corrected and the remote e-stop is now operating as intended for both buildings.

At the time of the release, during air stripper cleaning, the source area wells and DNAPL separator switches were in the “AUTO” position. It was thought that a full EQ tank would prevent the transfer of water from the DNAPL separator into the EQ tank. This logic was not present in the programming, and this omission has since been corrected. Additionally, the air stripper cleaning operating instructions have been updated to now require that all switches (for equipment not necessary for air stripper cleaning) be in the “OFF” position.

The EQ tank high level alarm switch was verified to be operational and performing as designed. The level switch tree in the EQ tank will be replaced with a level transmitter, which will perform the same purpose, but allow for greater ease of system optimization and increased system run-time. A redundant high level alarm float switch will be maintained for redundancy.

The remediation system operations and maintenance (O&M) manual will be updated to reflect the changes in operating instructions, and ARCADIS is reviewing other documentation and operating instructions associated with maintaining the system.

Planned instrumentation changes at the AOI 51 system include redundant high level alarms in the secondary containment sumps in both east and west buildings, and a redundant high level alarm in the DNAPL separator. Failure of the primary instrumentation listed above could lead to a release, so redundant high level alarms will be installed as an additional measure of redundancy.



HA-51-1001(0-0.5)

Photo 1.  
Approximate Extent of  
Release and Soil  
Sample Location.

